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(71) Applicant: THE BOARD OF REGENTS FOR OKLAHOMA STATE UNIVERSITY [US/US]; 203 Whitehurst, Oklahoma State University, Stillwater, OK 74078 (US).

(72) Inventor: KOTOV, Nicholas, A.; 2114 Celia Street, Stillwater, OK 74074 (US).

(74) Agent: WEEKS, R., Alan; Fellers, Snider, Blankenship, Bailey & Tippens, P.C., Suite 800, 321 S. Boston Avenue, Tulsa, OK 74103-3318 (US).

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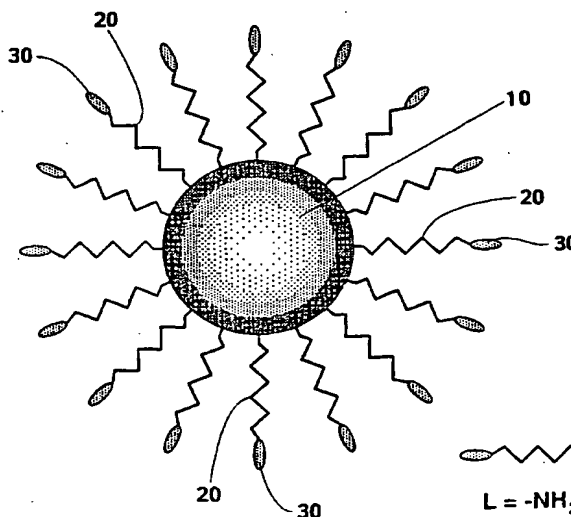
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(54) Title: BIOCONJUGATES OF NANOPARTICLES AS RADIOPHARMACEUTICALS



 is  $L - (CH_2)_n - SH$   
 $L = -NH_2, -OH, -COOH, -COH, \text{etc.}$

(57) Abstract: A bioconjugate including a nanoparticle covalently linked to a biological vector molecule. The nanoparticle is a generally radioactive metal ion and most typically a metal oxide. The biological vector molecule is typically a monoclonal antibody or fragment of a monoclonal antibody or a peptide having a known affinity to cancer cells. One or more additional, different biological moieties may be covalently linked to the nanoparticle in addition to the biological moieties may be covalently activity. The bioconjugate of the present invention has utility as an effective radiopharmaceutical to deliver a radiolabel in tumor treatment.

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## INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61K51/12 A61K47/48

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 01 33223 A (BIO MERIEUX ;BOSC ERIC (FR); BIBETTE JEROME (FR); CENTRE NAT RECH) 10 May 2001 (2001-05-10) see page 5, lines 17-20, page 7, line 11-20, claims 3 and 11	1,3,4, 7-10,14, 15
P,X	WO 01 19405 A (KLICHE KAY OLIVER ;TRIDELTA BIO MEDICAL GMBH (DE); BUSKE NORBERT ()) 22 March 2001 (2001-03-22) see abstract, page 4, line 37 to page 5, line 9, page 5, line 11 and lines 24-29, page 9, line 16 to page 13, line 2; examples; claims 1-3	1,3,4, 7-10,14, 15
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

G. Willière

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>SCHAERTL S ET AL: "A NOVEL AND ROBUST HOMOGENEOUS FLUORESCENCE-BASED ASSAY USING NANOPARTICLES FOR PHARMACEUTICAL SCREENING AND DIAGNOSTICS" JOURNAL OF BIOMOLECULAR SCREENING, LARCHMONT, NY, US, vol. 5, no. 4, 2000, pages 227-237, XP001006052 ISSN: 1087-0571 abstract</p>	1,3,4, 7-10,14, 15
X	<p>SHIKU H ET AL: "DEVELOPMENT OF A CANCER VACCINE: PEPTIDES, PROTEINS AND DNA" CANCER CHEMOTHERAPY AND PHARMACOLOGY, SPRINGER VERLAG, BERLIN, DE, vol. SUPPL, no. 46, 2000, pages S77-S82, XP002908597 ISSN: 0344-5704 see abstract, right hand column, lines 9-12; page 578, right hand column 3. paragraph</p>	1,3,4, 7-10,14, 15
X	<p>EP 0 516 252 A (DIAGNOSTIKFORSCHUNG INST) 2 December 1992 (1992-12-02) see page 6, line 31 to page line 24 and claim 10</p>	1,3,4, 7-10,15
X	<p>WO 96 04017 A (LAWACZEK RUEDIGER ;GAIDA JOSEF (DE); HERRMANN ANJA (DE); JUKL MONI) 15 February 1996 (1996-02-15) see abstract, page 10, lines 11-15, page 13, lines 22-24, page 41, lines 16-23 and claim 1</p>	1-4, 7-10,14, 15

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

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